

Number Nest Weekly Challenge

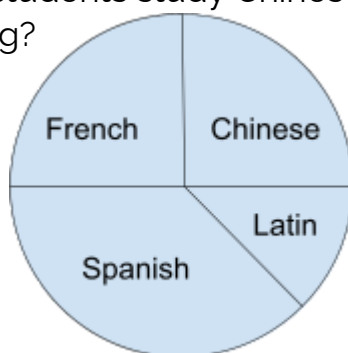


Warm up

1. $0.04 \times 10 = \mathbf{0.4}$
2. Put the values in ascending order: 0.75, $\frac{1}{2}$, 55% $\frac{1}{2}$, **55%**, **0.75**
3. What is the smallest prime number? **2**
4. $623 \times 8 = \mathbf{4984}$

Activity

1. In David's class, 25% of the students learn Chinese. The pie chart below shows the languages that are learnt in a different class. David says that the same number of students study Chinese in his class and the other class. Why is he wrong?



We know that 25% of the other class learns Chinese, but as we don't know how many people in either class, we can't say if it is the same number.

2. a) Byron found his local bus timetable, however some of the times are missing, fill in the missing times (assuming the traffic conditions are the same):

Bus terminal	08:51	09:20	9:49
Football Stadium	09:06	09:35	10:04
Museum	09:13	09:42	10:11
Tube station	09:48	10:17	10:46
High street	09:58	10:27	10:56



b) Byron lives 8 minutes away from the bus terminal. He wishes to visit Taylor, who lives 23 minutes away from the tube station. Byron says he will arrive at Taylor's house by 10:50. What time should Byron leave his house?

Byron would have to reach the Tube Station by 10.27, so he would have to get the 09:20 bus from the Bus terminal. Therefore, he would need to leave home by 09:12.

3. Here is a table of information about the wingspan of bats. Unfortunately, two entries are missing from the table.

Student	Data set (wingspans in cm)						Mean (cm)
A	13	x	16	12	10	15	13
B	13	16	y	13			

Student A collected 6 measurements and worked out that their mean was 13cm.

Student B collected 4 measurements.

The overall mean of the combined data was 13.4cm.

What are the two missing values (x and y)?

$$x = (13 \times 6) - (13 + 16 + 12 + 10 + 15) = 12$$

$$y = (13.4 \times 10) - (13 + 12 + 16 + 12 + 10 + 15 + 13 + 16 + 13) = 14$$

4. Grandpa has made one of his special giant rock cakes. At his party, five guests tried to guess the weight of the cake.

Their guesses were 5,040g , 5,060g , 5,110g , 5,120g and 5,150g.

None of these guesses was correct. The only two guesses that were more than 30g out were out by 70g and 90g.

What was the weight of the cake?

The cake weighed 5,130g.

The range of guesses is 110g, so the two 'wild' guesses must both be too high or both be too low.

Puzzle

I am thinking of a number under 30.

When multiplied by 8, it is a multiple of 3.

When divided by 9, it's as prime as can be.

When doubled, it contains a 3 or a 1.

When halved it's a square, but a 4, it has none.

What is my number?

18

